$\forall x \in]0,1[$

$$f'(x) = \frac{1.(1-x) - (-1).x}{(1-x)^2} \Big/ 2.\sqrt{\frac{x}{1-x}}$$

$$= \frac{1-x+x}{2(1-x)^2.\sqrt{\frac{x}{1-x}}}$$

$$f'(x) = \frac{1}{2(1-x^2)\sqrt{\frac{x}{1-x}}} > 0$$

x	0		1
$f'(x)$	$\|$	$+$	$\|$
$f(x)$	0	$\nearrow$	$+\infty$

$f(0) = 0$

$$\lim_{x \to 1^-} f(x) = \lim_{x \to 1^-} \sqrt{\frac{x}{1-x}} = +\infty$$